Operating Instructions

S4 Turbo

Be sure to read and comply with the operating instructions and safety information

Subject to technical change.

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Dear customer,

Congratulations on choosing a quality product from FRÖLING.

The FRÖLING S4 Turbo is a state-of-the-art design that conforms to all currently applicable standards and testing guidelines.

Please read and observe the operating instructions and always keep them close to the boiler for reference. Observing the requirements and safety information in the instruction manual makes a significant contribution to safe, appropriate, environmentally friendly and economical operation of the system.

The continuous development of our products means that there may be minor differences between the illustrations and other content of the document. If you discover any errors, please let us know.
Subject to technical change.

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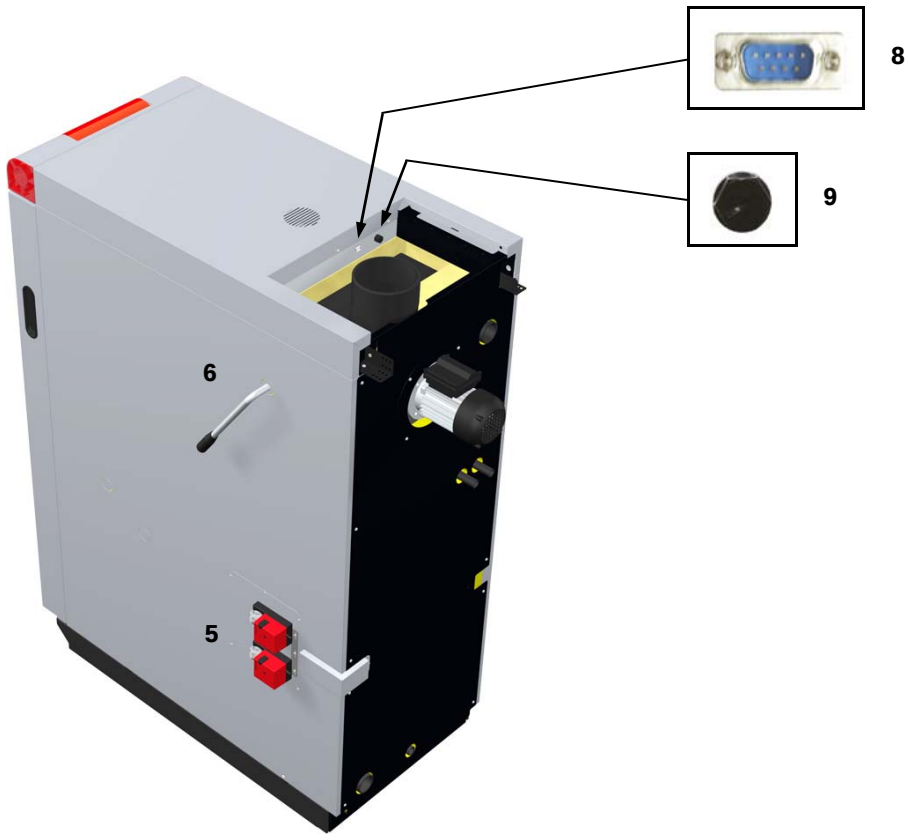
1 Product Overview



Item	Description
1	Insulating door
2	Fuel loading door
3	Pre-heating chamber door
4	Combustion chamber door with inspection glass
5	Actuators for automatic regulation of primary and secondary air
6	Lever of the heat exchanger cleaner (WOS system)
7	Lambdatronic S3200 control system
7.1	Graphical display to show operating statuses and parameters
7.2	Status LED (operating status): - green flashing light: boiler active - flashing red light: warning or fault persists
7.3	Navigation keys to move around in the menus and to change the parameter values
7.4	Function keys to call up individual boiler functions directly ➲ For key layout see control unit operating instructions
8	Service interface
9	STL - Safety Temperature Limiter

2 Safety

2.1 Safety Information

DANGER

Non-permitted use!

Incorrect use of the boiler can cause severe injuries and damage!

The instructions and information provided in the manual must be observed.

Details on procedure for operation, maintenance and cleaning, as well as troubleshooting for the boiler are included in the individual instructions. Any further work should be carried out by authorised heating engineers or by Fröling customer services.

WARNING

External influences!

Negative external influences, such as insufficient combustion air or non-standard fuel can cause serious faults in combustion (e.g. spontaneous combustion of carbonisation gases or flash fires) which can in turn cause serious accidents!

Instructions and information for versions and minimum values, as well as norms and guidelines for heating components in the instructions must be observed!

WARNING

Severe injuries and damage can be caused by an inadequate flue gas system!

Problems with the flue system, such as poor cleaning of the flue pipe or insufficient chimney draught can cause serious faults in combustion (such as spontaneous combustion of carbonisation gases or flash fires)!

You can only be guaranteed of optimum performance from the boiler if the flue gas system is running smoothly!

2.2 Permitted Uses

The boiler should only be operated when it is in full working order. It should be operated in accordance with the instructions, observing safety precautions, and you should ensure you are aware of the potential hazards.
Ensure that any faults, which might impair safety, are rectified immediately.

The Fröling S4 Turbo is intended exclusively for heating up central heating water. Use only the fuels specified under 2.2.1.

The manufacturer or supplier is not liable for any damages resulting from non-permitted uses.

2.2.1 Permitted fuels

For Austria:

Firewood with a max. length of 55cm (w < 25%)

For Germany:

Fuel class 4 (§3 of the 1st BimSchV i. d. g. F.)

Values in practice:	Hardwood	2 years in dry storage
	Soft wood	1 year in dry storage
	Coarse wood chips	1 year in dry storage

➲ Further information on fuel in the in the assembly instructions, section 2.3

2.2.2 Non-permitted fuels

The use of fuels not defined under 2.2.1, and particularly the burning of refuse, is not permitted.

⚠ CAUTION

Non-permitted fuels!

Burning non-permitted fuels increases the cleaning requirements and leads to a build-up of aggressive sedimentation and condensation, which can lead to damage to the boiler and also voids the warranty. Using non-standard fuels can lead to severe faults in combustion.

2.2.3 Who may operate the boiler?

Only trained operators are permitted to operate the boiler.

⚠ CAUTION

No unauthorised access to the boiler room!

Risk of personal injury and damage to property.

It is the responsibility of the operator to ensure that unauthorised persons, especially children, are kept away from the boiler.

2.3 Design Information

It is forbidden to carry out modifications to the boiler or to change or deactivate safety equipment.

Always comply with all fire, building, and electrical regulations when installing or operating the boiler system, in addition to following the operating instructions and mandatory regulations that apply in the country in which the boiler is operated.

2.3.1 Approval and obligation to report

NOTICE

Each heating system must be officially authorised.

The appropriate supervisory authority (inspection agency) must always be informed when installing or modifying a heating system, and authorisation obtained from the building authorities.

Austria:	Inform the civic/municipal building authorities.
Germany:	Register with an approved chimney sweep/the building authorities.

2.3.2 Requirements for central heating water

The requirements pertaining to the water used to fill the boiler are based on the following standards and guidelines:

Applicable standards and guidelines:

§

Austria:	ÖNORM H 5195-1
Germany:	VDI 2035
Switzerland:	SWKI 97-1

There are no other special requirements for central heating water.

☞ Note on filling with make-up water: bleed the filling hose before connecting to prevent air from getting into the system.

2.3.3 Ventilation of boiler room

The openings for the supply air and the exhaust air should be arranged as close to opposite each other as possible to achieve a good thermal draught effect.

☞ The supply air must be drawn in directly from outside. Exhaust air must be discharged directly outside.

Unless otherwise stipulated by the building regulations applicable to the room where the boiler is to be installed, the following standard shall apply:

Applicable standard:

§

- ÖNORM H 5170

2.3.4 Installing the heating system / Standards

The following standards govern the installation of heating systems:

Applicable standards:

§

ÖNORM / DIN EN 12828 Heating Systems in Buildings

The following prior standards still apply:

Austria:	- Closed systems as per ÖNORM B 8131 - Open systems as per ÖNORM B 8130
Germany:	- Closed systems as per DIN 4751 Part 2 - Open systems as per DIN 4751 Part 1

Return feed lift

If the hot water return feed is below the minimum return feed temperature, some of the hot water outfeed will be mixed in.

⚠ CAUTION

Risk of dropping below dew point/condensation formation if operated without return feed lift.

Condensation water forms an aggressive condensate when combined with combustion residue, leading to damage to the boiler.

Regulations stipulate the use of a return feed lift.

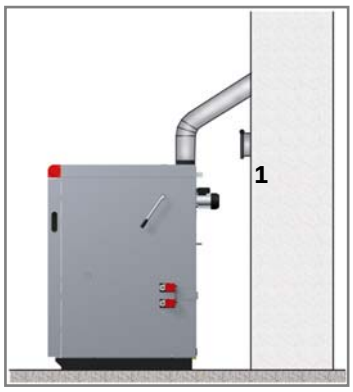
☞ The minimum return feed temperature is 55 °C. We recommend fitting some kind of control device (e.g. thermometer).

Combination with storage tank

You can find more detailed information about storage tank design in the boiler assembly instructions.

➲ See assembly instructions “1.2 Design information”

2.3.5 Chimney connection / chimney system



EN 303-5 specifies that the entire flue gas system must be designed to prevent, wherever possible, damage caused by seepage, insufficient feed pressure and condensation.

Please note in this respect that flue gas temperatures lower than 160K above room temperature can occur in the permitted operating range of the boiler.

The flue gas temperatures (for clean systems) and additional flue gas values can be found in the technical specification sheets.

➲ See “Boiler data relating to design of the flue gas system“

Connect to the chimney via the shortest path, preferably with a vertical gradient of less than 30–45°. Insulate the connecting piece.

The entire flue gas system (chimney and connection) must be calculated as per ÖNORM/DIN EN 13384-1 or prior standards
ÖNORM M 7515/DIN 4705-1.

Local regulations and other statutory regulations also apply.

☞ The chimney must be authorised by a smoke trap sweeper or chimney sweep.

Draught limiter

☞ We recommend that a draught limiter is fitted (1)

☞ Install the draught limiter directly under the mouth of the flue line, as there is always low pressure there.

Boiler data relating to design of the flue gas system

			S4 Turbo						
Description		**Unit**	**15**	**22**	**28**	**34**	**40**	**50**	**60**
Flue gas temperature	RL	°C	140	160	180	140	170	150	170
	PL		-	110	130	110	130	100	110
Flue gas mass flow	RL	kg/s	0.011	0.016	0.021	0.025	0.030	0.033	0.041
	PL		-	0.007	0.010	0.012	0.015	0.016	0.020
Minimum feed pressure		mbar	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Maximum permissible feed pressure			as per ÖNORM / DIN EN 303-5						
Flue pipe diameter		mm	150	150	150	150	150	150	150

RL = Rated Load, PL = Partial Load

2.4 Safety Devices

2.4.1 Devices for preventing the boiler from overheating

Thermal discharge safety device

At around 100 °C a valve opens and sends cold water to the safety heat-exchanger to reduce the temperature.

Safety Temperature Limiter STL

Switches off the blower fan at the maximum boiler temperature of 105 °C. The pumps continue to run.

Once the temperature falls below approx. 95 °C, the STL can be reset mechanically:

- ❒ Remove the back insulating cover
- ❒ Unscrew the cap on the STL
- ❒ Unlock the STL by pressing with a screwdriver

Safety valve

Protection against over-heating/ excessive pressure:
When the boiler pressure reaches a maximum of 3 bar, the safety valve opens and the heating water is released in the form of steam.

2.5 Safety instructions for the installation room

1) Danger of fire due to flammable materials.
   No flammable materials should be stored near the boiler.

2) Damage due to impurities in combustion air.
   Do not use any hydrogen halides or any cleaning agents containing chlorine in the room where the boiler is installed.

3) Keep the air suction opening of the boiler free of dust.

4) The room where the boiler is installed must be frost-proof.

2.6 Residual risks

⚠ WARNING

Touching hot surfaces!

Hot parts and the flue pipe can cause serious burns!

- ❒ It should be standard practice to wear protective gloves should be worn when working on the boiler.
- ❒ Only operate the boiler using the handles provided for this purpose.
- ❒ Insulate the flue pipes or simply avoid touching them during operation.

⚠ WARNING

Opening the combustion chamber door during operation!

This may cause injury, damage and smoke!

Do not open the doors behind the insulating door while the system is operating!

⚠ WARNING

Use of non-permitted fuel!

Non-standard fuels can cause serious faults in combustion (e.g. spontaneous combustion of carbonisation gases / flash fires) which can lead to serious accidents!

Only use fuels specified in the chapter on “Permitted Uses” in these operating instructions.

⚠ WARNING

Automatic ignition attempt failed!

Possible damage to the equipment!

Damage to heating system (e.g. by frost) because automatic ignition was set incorrectly or not carried out.

- ❒ Before leaving the boiler check the start time that has been set for automatic ignition.
- ❒ Within an appropriate time ensure that automatic ignition has been carried out successfully.

  ☞ Due to the different types of wood, Fröling cannot guarantee successful automatic ignition.
  The manufacturer/supplier is not responsible for resulting damage.

2.7 Emergency procedure

2.7.1 Overheating of the system

If the system overheats in spite of the safety devices, proceed as follows:

☞ **Do not interrupt the power supply under any circumstances.**

- ❒ Keep all the doors on the boiler closed.
- ❒ Open all mixer taps, switch on all pumps.
  - ➥ Fröling heating circuit control takes over this function in automatic operation.
- ❒ Leave the boiler room and close the door.
- ❒ Open any available radiator thermostat valves

If the temperature does not drop, inform the installer or Fröling customer services:

➲ Page 30, 6.2 Address of manufacturer

2.7.2 Smell of flue gas

⚠ DANGER

Smell of flue gas!

Flue gases can cause fatal poisoning!

- ❒ Keep all the doors on the boiler closed.
- ❒ Air the room where the boiler is installed
- ❒ Close the fire protection door and doors to living areas.

2.7.3 Fire

⚠ DANGER

Fire!

In case of fire, there is a risk of burns and explosions!

- ❒ Turn off the boiler
- ❒ Use a tested fire extinguisher for fire class AB to fight the fire

AB powder

3 Operating the system

3.1 Initial startup

NOTICE

☞ **Optimum efficiency and efficient, low-emission operation can only be guaranteed if the system is set up by trained professionals and observing the standard factory settings.**

Take the following precautions:

❒ Initial startup should be carried out with an authorised installer or with Fröling customer services.

The individual steps for initial startup are explained in the operating instructions for the controller.

➲ See the operating instructions for the Lambdatronic S 3200

NOTICE

If condensation escapes during the initial heatup phase, this does not indicate a fault.

☞ If this occurs, clean up using a cleaning rag.

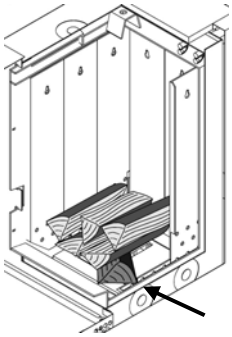
⚠ CAUTION

Heating up the boiler too rapidly on initial startup!

Possible damage to the equipment!

If the output during the heating-up process is too great, the combustion chamber may be damaged as a result of drying out too rapidly!

☞ Drying fissures, on the other hand, are normal and do not indicate a malfunction.



For this reason the following applies for the first time you heat up the boiler:

☞ **Place 1 piece of wood diagonally (1) across the combustion chamber**

❒ Load the boiler with a small amount of firewood (max. 10-20% of the fuel loading chamber)

❒ Ignite it and allow it to burn up with the central pre-heating chamber door open

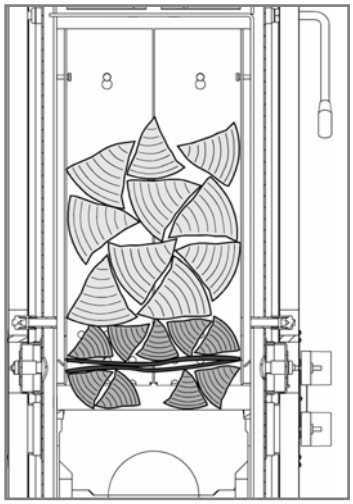
3.2 Heating the boiler

3.2.1 Switching on the boiler

❒ Press this function key (6.4) briefly
➥ The heating system is controlled via the control system according to the selected mode in automatic mode.

❒ For other modes press the relevant function key
➲ Operating instructions for the Lambdatronic S 3200

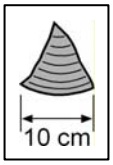
3.2.2 Heating up the boiler



❒ Open the insulating door and the fuel loading door
➥ The induced draught fan switches on

❒ Fill the fuel loading chamber in accordance with the output
- first layer of small pieces of wood
- second layer of cardboard
- third layer with more small pieces of wood
- fill the rest with firewood

☞ Definition of small pieces of wood:
Firewood with a maximum length of 10 cm along the edge to the cut

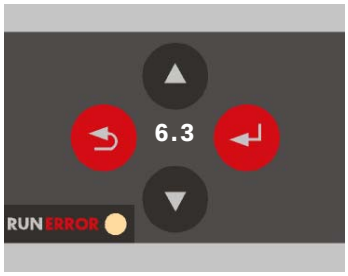


☞ Use firewood with a length of approximately 50 cm and arrange it lengthwise

☞ The burn-out opening in the grate must remain free!

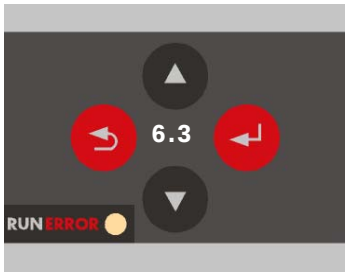
❒ Close the fuel loading door

☞ It is recommended that you do not remove the ash in the combustion chamber during each heating-up process, to protect the combustion chamber.



❒ Press this navigation key (6.3) briefly
➥ The induced draught fan switches off

❒ Open the pre-heating chamber door and ignite the cardboard

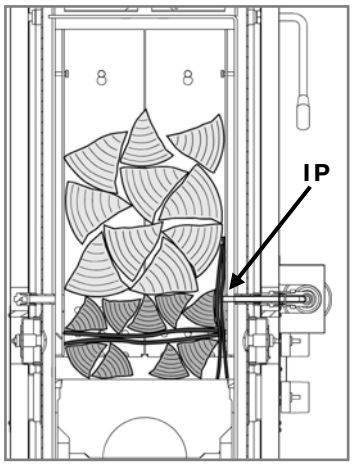


❒ Press this navigation key (6.3) briefly
➥ The induced draught fan switches on

❒ Leave the pre-heating chamber door open for approximately 5 minutes
➥ A bed of embers forms
❒ Close the pre-heating chamber door and the insulating door

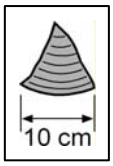
3.2.3 Heating up the boiler with automatic ignition

❒ Open the insulating door and the fuel loading door
➥ The induced draught fan switches on
❒ Check the combustion chamber for residual embers
☞ Residual embers could ignite wood before the automatic start!
❒ If necessary clean the combustion chamber fully
➲ See 4.2 Inspection, cleaning and self maintenance



❒ Open the ignition pipe (IP) to check for dirt and clean if necessary
❒ Fill the fuel loading chamber in accordance with the output
- first layer of small pieces of wood
- second layer of cardboard and next to the ignition pipe
- third layer with more small pieces of wood
- fill the rest with firewood

☞ Definition of small pieces of wood:
Firewood with a maximum length of 10 cm along the edge to the cut



☞ Use firewood with a length of approximately 50 cm and arrange it lengthwise
☞ The burn-out opening in the grate must remain free!

❒ Close the fuel loading door and insulating door
➥ The boiler changes to “preventilation” status. To guarantee a safe boiler operating status and to rule out possible ignition by residual embers due to incomplete cleaning of the combustion chamber, the boiler attempts to reach “Heating” status within a specified safety time without activating the ignition.
➥ After this time has elapsed the boiler remains in “ignition wait” status until the time specified in the ignition menu for automatic ignition has been reached.
➲ See boiler control unit operating instructions

3.2.4 Controlling the boiler

Necessary control steps. Displaying or modifying parameters:
➲ See the operating instructions for the Lambdatronic P 3200

3.2.5 Refilling with fuel

⚠ WARNING

Touching hot surfaces behind the insulating door!

Risk of burns from hot surfaces!

By the nature of its operation, the surfaces and operating elements in the area behind the insulating door get hot! When working with firewood, there is also a risk of injury from splinters.

❒ When working on the boiler during operation, particularly when reloading fuel, it should be standard practice to wear protective gloves.

❒ Open the central pre-heating chamber door and check the fuel

If the fuel in the boiler has burned up:

❒ Open the fuel loading door and top up the fuel

Further information for efficient and environmentally friendly heating:

Operating with a storage tank

The reloading intervals should depend exclusively on the storage tank.

If the temperature of the storage tank above has dropped to a certain temperature (floor heating: approx. 30-40 °C, radiator heating: approx. 50 °C), reload fuel.

☞ With the Lambdatronic S3200, observe the storage tank loading status on the display!

The amount of fuel should be measured so as to ensure that the storage tank is continuously warmed to the maximum storage temperature (max. 80-90 °C).

☞ The amount to reload also depends on the type of fuel.

Operating without a storage tank

NOTICE

Feed based on output!

☞ **Only replenish the fuel if energy is needed!**

If too much fuel is loaded, the boiler drops below its minimum output limit and goes over to “constant burn” mode (blower fan switches off)

☞ The level of efficiency drops in constant burn mode, the emissions increase and the boiler can tar up (pitch formation!)

4 Boiler servicing

4.1 General information on servicing

⚠ DANGER

Working on electrical components

Risk of serious injuries from electric shocks

❒ Work on electrical components should only be carried out by authorised technicians

⚠ WARNING

Carrying out maintenance when the boiler is hot!

Hot parts and the flue pipe can cause serious burns!

❒ It should be standard practice to wear protective gloves should be worn when working on the boiler.
❒ Only operate the boiler using the handles provided for this purpose.

Before starting any maintenance work:
❒ Allow the fuel in the boiler to burn off
❒ Allow the boiler to cool down for at least 1 hour

⚠ WARNING

Non-permitted cleaning and maintenance!

Incorrect or insufficient cleaning and maintenance of the boiler can cause serious faults in combustion (e.g. spontaneous combustion of carbonisation gases / flash fires) and this can lead to serious accidents!

Clean the boiler following the instructions. Follow the boiler operating instructions.

NOTICE

☞ We recommend that you keep a maintenance book in accordance with ÖNORM M7510 of the Technical Directive for Fire Prevention (TRVB)

4.2 Inspection, cleaning and self maintenance

☞ Regular cleaning of the boiler extends its life and is a basic requirement for smooth running.
So clean the boiler regularly!

☞ Recommended: When cleaning, use an ash vacuum.

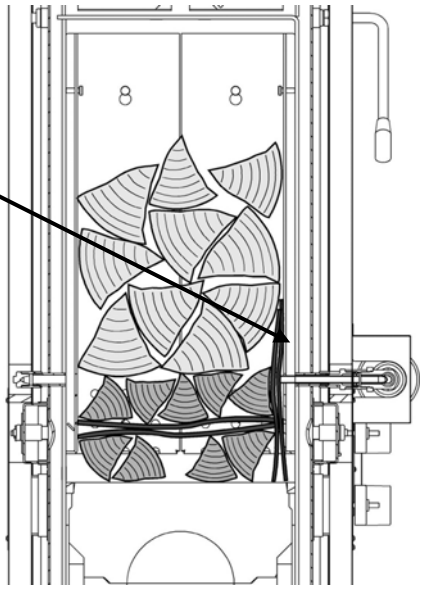
4.2.1 Daily maintenance / Each time before heating up

Cleaning the heat exchanger pipes

❒ Move the lever of the cleaning system several times before the heating-up process (5-10 times up and down)

Checking ignition pipe (only with automatic ignition)

❒ Before filling the combustion chamber, check the ignition pipe of the automatic ignition for dirt and clean if necessary



4.2.2 Weekly maintenance

Removing ash

- ❒ Open the insulating door and pre-heating chamber door
- ❒ Scrape the ash from the fuel loading chamber into the combustion chamber.
- ❒ Open the combustion chamber door
- ❒ Remove the ash using the rounded ash shovel
- ❒ Feed the ash from the lower channel of the combustion chamber forwards into the ash drawer provided using the furnace tool
- ❒ Shovel the ash into container provided
- ☞ Fire-proof container with cover!

Checking the thermal discharge safety device

- ❒ Check the seal of the discharge valve
  - ➥ The discharge pipe must not drip
- ❒ Exception:
  Boiler temperature > approx. 100 °C

If water is dripping from the discharge pipe:

- ❒ Clean the discharge safety device or have the installer replace it if necessary

Checking the system pressure

- ❒ Check the system pressure on the pressure gauge
  - ➥ The value must be 20% over the pre-stressed pressure of the expansion tank
  - ➲ See the expansion tank's operating instructions

If the system pressure decreases:

- ❒ Reload with water
  - ☞ If this happens frequently, check the seal of the heating system!

If large pressure fluctuations are observed:

- ❒ Have the expansion tank checked.

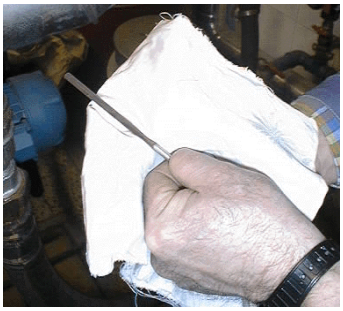
4.2.3 Monthly maintenance

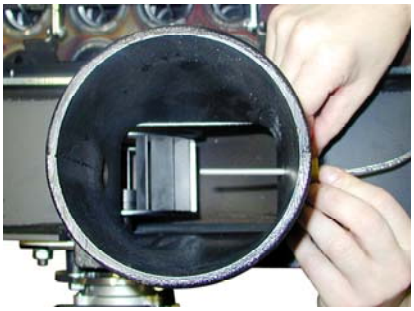
Cleaning the grating

- ❒ Open the insulating door and fuel loading chamber door
- ❒ Remove the two-part grating
- ❒ Remove the ash deposits under the grating to ensure problem-free intake of secondary air!

☞ Tip: Use an ash vacuum!

Cleaning the flue gas sensors





- ❒ Release the retaining screw and remove the flue gas sensor (1) from the flue gas pipe
- ❒ Wipe off the flue gas sensor with a clean cloth
- ❒ Push in the flue gas sensor until about 20 mm of the sensor remains protruding from the bushing

4.2.4 Annual maintenance

Checking the primary air openings

- ❒ Open the insulating door and fuel loading chamber door
- ❒ Unhinge the cladding plates
- ❒ Check the primary air openings (C) for unobstructed air-flow
- ❒ If necessary, clean the openings

- ❒ Unhinge the front air guide plate and clean the slits

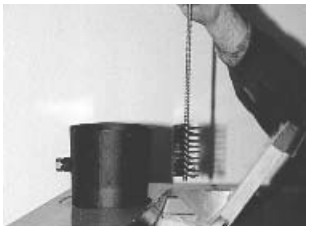
☞ For cleaning use the door adjusting spanner provided if appropriate

Cleaning the heat exchanger pipes

- ❒ Remove the upper insulating cover and the cleaning access cover
- ❒ Dismantle the fixing bolts (2) and remove the WOS lever
- ❒ Take out the turbulators upwards together with the mounting bracket

- ❒ Remove the ash build-up in the pipes using the cleaning brush

  - ☞ The cleaning brush must be pushed all the way through before pulling it up.
  - ☞ The bristles cannot be turned in the pipe.



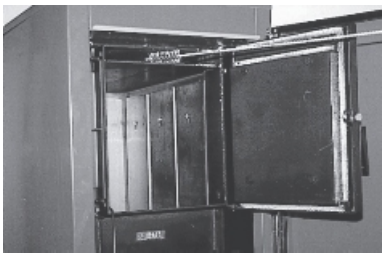
- ❒ Feed the ash from the lower channel of the combustion chamber forwards into the ash drawer provided using the furnace tool

- ❒ Feed the turbulators into the heat exchanger pipes
- ❒ Insert the WOS lever and fix with screws
- ❒ Fit the cleaning cover and top insulating cover

Cleaning the carbonisation gas duct

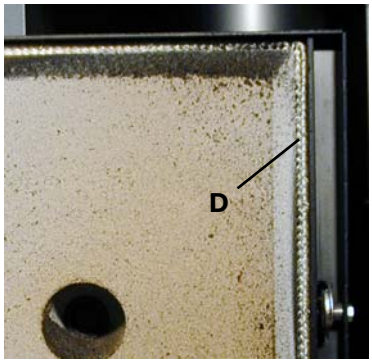
- ❒ Open the insulating door and fuel loading chamber door
- ❒ Clean the carbonisation gas duct with a small brush

  - ☞ Carbonisation gases are sucked out when the insulating door is opened!



Checking the seal on the doors

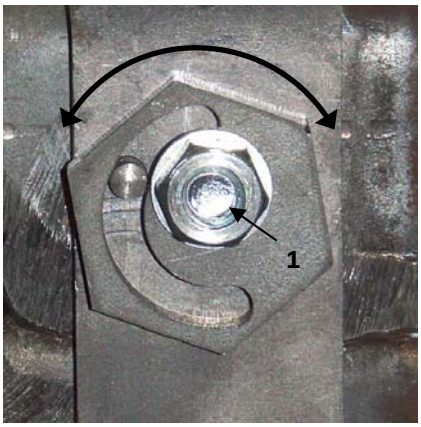
- ❒ Close the respective door and check its seal
- ❒ Check seal (D) for perfect alignment on the door frame
  - ➥ Imprint in the seal



If the seal is coloured black at several points or the imprint is disjointed:

- ➥ The seal is no longer efficient.
- ➥ Tighten the door latches or replace the seal

Positioning the doors:



- ❒ Loosen the locknuts (1) of the locking cam
- ❒ Press the door onto the door frame and set the contact pressure using the locking cam
  - ☞ The adjusting spanner is included in delivery.
- ❒ Fix the position by tightening the locknuts

- ❒ Set the contact pressure on the door handle side by moving the locking plate

Cleaning the flue gas pipe

- ❒ Clean the pipe connecting the boiler and the chimney with a chimney sweeping brush
  - ☞ Depending on the layout of the flue pipes and the chimney draught cleaning yearly may not be enough!

Checking the draught controller flap and explosion flap

- ❒ Check the draught controller flap and explosion flap for ease of operation

Cleaning the induced draught ventilator

- ❒ Detach the induced draught ventilator on the back of the boiler
- ❒ Check for dirt and damage
- ❒ Clean the blower wheel inside and out using a soft brush or paint brush
  - ☞ Do not move the balancing weights on the blower wheel!

- ❒ Remove dirt and deposits from the induced draught housing using a scraper
- ❒ Remove any fallen ash using an ash vacuum

4.3 Testing Emissions

4.3.1 Measurement at rated load

- ❒ Press this key
  - ➥ The boiler is operated for 30 min at rated load:
    - Boiler temperature setpoint is set to 85°C
    - Heating pumps switch on and the mixer valves open
    - Boiler loading is activated

When is it possible to measure:

- ☞ Flue gas temperature at approx. 170°C
- ☞ CO2 content of the flue gas between 10 and 14%
- ☞ Boiler temperature above 65°C

4.3.2 Measurement at partial load (if necessary)

After measurement, at rated load in chimney-sweep mode:

- ❒ Press this key
  - ➥ Automatic operation is activated
- ❒ For heat consumption ensure:
  - Ensure that heating pumps are switched on
  - Open mixer valves and radiator valves
  - Set the boiler loading time to the current time
- ❒ Force partial load:
  - Reduce the boiler temperature setpoint by 5 - 10°C

When is it possible to measure:

- ☞ Flue gas temperature at approx. 140°C
- ☞ CO2 content of the flue gas between 10 and 14%
- ☞ Boiler temperature above 65°C

After measurement all adjusted parameters (e.g. boiler loading times, ..) must be reset to their original value!

4.4 Maintenance agreement / Customer service

☞ We recommend a yearly inspection by Fröling customer services or an authorised partner (third party maintenance)!

Regular maintenance and servicing by a heating specialist will ensure a long, trouble-free service life for your heating system.
It will ensure that your system stays environmentally-friendly and operates efficiently and cost-effectively.

In the course of this maintenance the entire system is inspected and optimised, particularly regulation and control of the boiler. The emission measurement carried out can also be used to draw conclusions about the combustion performance of the boiler.

For this reason, FRÖLING offers a service agreement, which optimises operating safety. Please see the details in the accompanying guarantee certificate.

Your Fröling customer service office is also glad to provide consultation.

4.5 Replacement parts:

With Fröling original replacement parts in your boiler, you are using parts, which are perfectly matched to each other. As the parts fit together so well, installation times are shortened and lifespan is maintained.

NOTICE

Installing non-original parts voids the guarantee!

❒ Only replace components or parts with original replacement parts

4.6 Disposal information

4.6.1 Disposal of the ash

☞ The ash should be disposed of in accordance with waste management law (AWG).

4.6.2 Disposal of system components

❒ Ensure that they are disposed of in an environmentally friendly way in accordance with waste management law

❒ You can separate and clean recyclable materials and send them to a recycling centre.

5 Troubleshooting

5.1 General faults in the power supply

Error	Cause of error	Error correction
Nothing is shown on the display **No power to the controls**	General power failure FI circuit breaker or line protection is switched off Faulty fuse in the controls	 Switch on the FI circuit breaker or line protection Replace fuse – note the current (10AT)

5.1.1 Behaviour of system after a power failure

When the power supply has been restored the boiler returns to the previously specified mode and is controlled according to the specified program.

☞ **Keep the doors of the boiler closed during and after the power failure!**

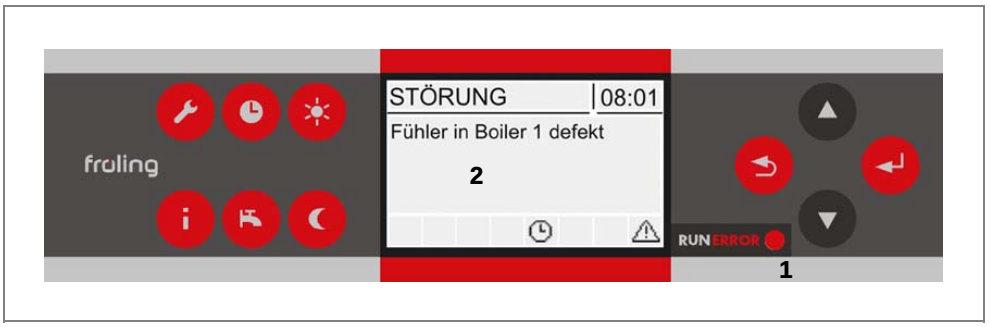
5.2 Excessive temperature

The safety temperature limiter (STL) switches off the blower fan at the maximum boiler temperature of 105 °C. The pumps continue to run.

Once the temperature falls below approx. 95 °C, the STL can be reset mechanically:

- ❒ Remove the back insulating cover
- ❒ Unscrew the cap on the STL
- ❒ Unlock the STL by pressing with a screwdriver

5.3 Faults with fault codes



If a fault has occurred and has not yet been cleared:

➥ Status LED (1) flashes red

➥ A fault message is shown on the display (2)

5.3.1 Procedure for fault messages

The procedure for a fault message as well as causes for faults and procedure for troubleshooting are described in the operating instructions of the boiler controls:

➲ See the operating instructions for the Lambdatronic S 3200

5.3.2 Acknowledging a fault message

Trace and remove the fault and then:

❒ Press this key

➥ Status LED flashes green

6 Appendix

6.1 Guarantee conditions

Our sale and delivery conditions shall always apply. These are made available to customers in advance, and are deemed to have been accepted at the time the contract is concluded.

The warranty conditions can also be found in the enclosed guarantee certificate.

6.2 Address of manufacturer

FRÖLING
Heizkessel- und Behälterbau GesmbH

Industriestraße 12
A-4710 Grieskirchen
AUSTRIA

TEL +43 (0)7248 606 0
FAX +43 (0)7248 606 600
E-MAIL info@froeling.com
INTERNET www.froeling.com

6.3 Declaration of Conformity

fröling

EU DECLARATION OF CONFORMITY

Product: **Firewood boiler**
Types: **S4 Turbo 15, S4 Turbo 22, S4 Turbo 28, S4 Turbo 34, S4 Turbo 40, S4 Turbo 50, S4 Turbo 60**

EU Directives:

89/392/EEC	Legal Regulations for Machinery
73/23/EEC	Legal Regulations for Electrical Equipment: Low Voltage Directive
89/336/EEC	Electromagnetic Compatibility (EMC) Directive
97/23/EC	Pressure equipment directive in accordance with Appendix 1

Applied harmonised standards:

ÖNORM – EN 303-5	Boilers for Solid Fuels up to 300 kW Requirements, Testing and Designation
ÖNORM – EN ISO 3834-2	Welding Quality Specifications

We hereby certify that the serially produced versions of the above products comply with the directives, guidelines and standards specified.

Grieskirchen; 15/01/2007

Quality assurance

Technical services

Fröling Heizkessel- und Behälterbau Ges.m.b.H, Industriestraße 12, A-4710 Grieskirchen
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